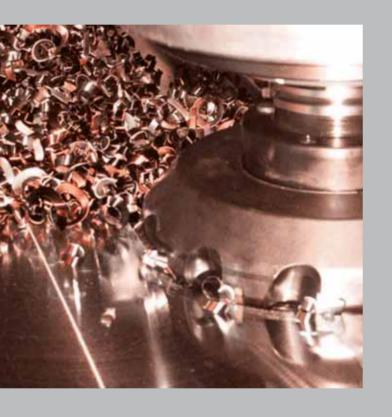




GSS | GLOBAL SPINDLE SOLUTIONS



MILLING SPINDLES

MILLING

FOR EVERY APPLICATION

- MORE THAN 1,000

DRIVE SOLUTIONS
FROM ECONOMICAL

TO HIGH PERFORMANCE

WEISS-MILLING SPINDLES

BEST SELECTION

Catalogue spindles	Overview	4
	Performance characteristics	5
Standard series	Overview	6
	Performance characteristics	7
	Spindles with asynchronous technology	8
	Spindles with synchronous technology	9
Individual designs	Performance characteristics	10
	Reference spindles	11
	Spindle data	12
Contact I Enquiries	Your contact	18
	Fax enquiry form	19



CATALOGUE SPINDLES

MILLING

CATALOGUE SPINDLES ON A HIGH LEVEL -

ECS-MOTOR SPINDLE 2SP1

The ECS motor spindle 2SP1 is the ideal drive solution for main spindles in standard milling machines and machining centres. 2SP1 motor spindles have many strong arguments, particularly in comparison with belt-driven solutions:

Advantages of the 2SP1 motor spindles:

- cost-efficient solutions compared to current belt-driven solutions, and less expensive than customer-specific motor spindle designs
- as desired by customer, hydraulic or pneumatic tool unclamp unit
- when having pneumatic tool release a hydraulic unit is not required
- integrated sensor system (for indexing and monitoring of tool changes)
- worldwide system solution provider including spindles from one source at Siemens
- higher speeds and shorter acceleration time than conventional solutions
- Design with high rigidity
- compact solution
- fewer parts and less installation efforts compared to belt driven solution



ECS motor spindle 2SP1 spectrum

Order No.	Rated Power	Rated Torque	Rated speed	Rated Current	Rated Power	Rated Torque	Rated Power	Rated Torque	Rated speed	Rated Current	Max. speed
	S1-100% (kW)	S1-100% (Nm)		S1-100% (A)	S6-40% (kw)	S6-40% (Nm)	S1-100% (kw)	S1-100% (Nm)		S1-100% (A)	
Synchronous			star o	peration				delta d	peration		
2SP1202-1HA■■-1 D F2	12.0	42	2,700	30	12.0	55					15,000
2SP1202-1HB■■-2 D F2	15.5	42	3,500	42	15.5	55					18,000
2SP1204-1HA ■■ -1 D F2	26.4	84	3,000	60	26.4	110					15,000
2SP1204-1HB■■-2 D F2	35.0	78	4,300	79	35.0	110					18,000
Asynchronous											
2SP1253-8HA 0 ■-0 ■ ■ 2	13.2	70	1,800	28	18.9	100	13.2	32	4,000	29	10,000
2SP1253-8HA 0 ■-1D ■2	13.2	70	1,800	28	18.9	100	13.2	32	4,000	29	15,000
2SP1255-8HA 0 ■-0■■2	11.7	140	800	30	16.7	200	11.7	62	1,800	29	10,000
2SP1255-8HA 0 ■-1D ■2	11.7	140	800	30	16.7	200	11.7	62	1,800	29	15,000
Synchronous											
2SP1253-1HA0 ■-0■■2	26.0	100	2,500	53	29.0	130					10,000
2SP1253-1HB0 ■-1D ■2	35.0	100	3,300	68	38.0	130					15,000
2SP1255-1HA0 ■ -0 ■ ■2	46.3	170	2,600	95	55.0	236					10,000
2SP1255-1HB0 ■ -1D ■ 2	53.4	170	3,000	120	64.0	236					15,000

Options for ECS motor spindle 2SP1

- Sensor system
 B: Sensor "Tool clamped"
- C: B + Sensor "draw bar in release position"
- D: C + sensor "clamped without tool"
- F: D + Sensor "position release piston"

Tool mounts

- A: Tool mount SK 40
- B: Tool mount BT40 45
- C: Tool mount CAT 40
- D: Tool mount HSK A 63
- E: Tool mount BT 40 30

Coolant

- 1: closed cooling jacket
- 2: closed cooling jacket and tool interior coolant
- 3: closed cooling jacket, tool interior coolant and ring for external WZG cooling (only for 2SP120..)

Tool clamping and release device

- 0: pneumatic
- 1: hydraulic



The extensive program of dimensions, outputs, and descriptions of 2SP1 motor spindles can be found in our catalogue or on our homepage at: www.weissgmbh.de



STANDARD SERIES

G MILLING

Standard series set the standard!

Milling spindles from the standard series offer top performance at affordable prices: At maximum speeds of up to 40,000 rpm and rated outputs (S1–100%) of up to 80 kW, you'll find a broad selection of high-class and field tested motor spindle units.



With about 20 spindle models from which to select, the standard series offers a suitable solution for almost every application. Take advantage of the economic benefits that Siemens has to offer!

Advantages of standard series:

- affordable to procure
- short delivery
- field tested and proven
- latest state-of-the-art design
- affordable spindle service through optional stocking of replacement spindles and parts

Standard series MILLING										
AS	YNCHRON	OUS TECHNO	LOGY		SYNCHRONOUS TECHNOLOGY					
SPINDLE NO:	DIAMETER	MAX speed	RATED OUTPUT S1-100%	SPINDLE NOSE DIN 55026-	RATED OUTPUT \$1-100%	MAX speed	DIAMETER	SPINDLE NO:		
F150A.30.18	150 mm	30,000 rpm	18 kW	■ E40	11 kW	30,000 rpm	150 mm	F150S.30.11		
F150A.40.18	150 mm	40,000 rpm	18 kW							
F170A.18.46	170 mm	18,000 rpm	46 kW	▲ A63	29 kW	18,000 rpm	150 mm	F150S.18.29		
F170A.24.46	170 mm	24,000 rpm	46 kW		41 kW	18,000 rpm	170 mm	F170S.18.41		
F210A.18.18	210 mm	18,000 rpm	18 kW		28 kW	18,000 rpm	210 mm	F210S.18.28		
F210A.24.18	210 mm	24,000 rpm	18 kW		28 kW	20,000 rpm	210 mm	F210S.20.28		
F230A.18.40	230 mm	18,000 rpm	40 kW		35 kW	18,000 rpm	230 mm	F230S.18.35		
F230A.24.40	230 mm	24,000 rpm	40 kW							
F230A.30.80	230 mm	30,000 rpm	80 kW							
F285A.10.32	285 mm	10,000 rpm	32 kW	▲ A100 ►	78 kW	10,000 rpm	285 mm	F285S.10.78		
F285A.15.32	285 mm	15,000 rpm	32 kW		78 kW	14,000 rpm	285 mm	F285S.14.78		

PERFORMANCE CHARACTERISTICS

Tool interface:

HSK in all standard sizes, optional ISO for low speed

Taper and planar surface:

Filtered compressed air in the taper and on the planar surface for cleaning and for lasting precision from of the tool interface

Precision spindle bearings:

Steel or hybrid bearings for maximum precision

Bearing lubrication:

Grease for life Oil-air lubrication

Bearing temperature monitoring:

PT100 or PT1000

Sealing on working end:

Labyrinth with air purge

Motor temperature monitoring:

Compatible with all frequency converter types

Encoder:

Vector controlled operation compatible with all frequency converter types

Tool clamp:

Tool clamping with power drawbar system

Tool release unit:

Hydraulic for minimised tool changeover times, optional available with pneumatic cylinder

Drawbar position monitoring:

Analogue or digital

Rotary joints:

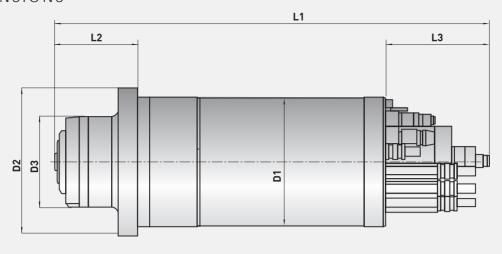
Cutting coolant liquid up to 80 bar, minimal quantity lubrication and dry machining possible without modification

Options:

- Sensor, axial spindle growth:
 Direct interaction to length compensation in the machine
- Acceleration sensor: Determination and monitoring of occurring acceleration to protect the spindle and for trend analysis
- external cutting coolant (nozzles)



DIMENSIONS



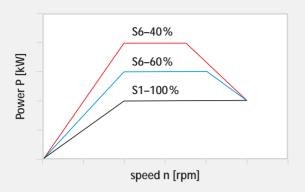
MILLING I STANDARD SPINDLES

ASYNCHRONOUS TECHNOLOGY

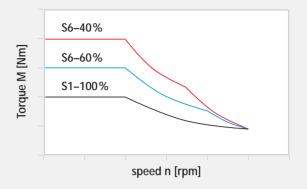
Model no.	Tool Inter- face [HSK-]	Lubrication	Max. speed	Rated Power \$1–100 %	Rated Torque S1-100 %	Rated speed	Rated Current	D1 [mm]	D2 [mm]	D3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Weight [kg]
F150A.30.18	E40	Grease	30,000 rpm	18 kW	12 Nm	14,800 rpm	38 A	150	190	150	571	170	90	92
F150A.40.18	E40	Oil-air	40,000 rpm	18 kW	12 Nm	14,800 rpm	38 A	150	190	150	571	170	90	92
F170A.18.46	A63	Grease	18,000 rpm	46 kW	45 Nm	9,880 rpm	98 A	170	200	150	787	122	111	100
F170A.24.46	A63	Oil-air	24,000 rpm	46 kW	45 Nm	9,880 rpm	98 A	170	200	150	787	122	111	100
F210A.18.18	A63	Grease	18,000 rpm	18 kW	60 Nm	2,860 rpm	49 A	210	250	152	748	152	211	125
F210A.24.18	A63	Oil-air	24,000 rpm	18 kW	60 Nm	2,860 rpm	49 A	210	250	152	748	152	211	125
F230A.18.40	A63	Grease	18,000 rpm	40 kW	46 Nm	8,400 rpm	81 A	230	280	152	768	152	211	140
F230A.24.40	A63	Oil-air	24,000 rpm	40 kW	46 Nm	8,400 rpm	81 A	230	280	152	768	152	211	140
F230A.30.80	A100	Grease	30,000 rpm	80 kW	46 Nm	16,500 rpm	160 A	230	280	154	676	115	141	140
F285A.10.32	A100	Grease	10,000 rpm	32 kW	300 Nm	1,020 rpm	125 A	285	340	208	965	200	229	310
F285A.15.32	A100	Oil-air	15,000 rpm	32 kW	300 Nm	1,020 rpm	125 A	285	340	2508	965	200	229	310

A detailed data sheet for all spindle numbers can be downloaded from our homepage at: www.weissgmbh.de

POWER CHARACTERISTICS



TORQUE CHARACTERISTICS



MILLING I STANDARD SPINDLES

SYNCHRONOUS TECHNOLOGY

Model no.	Tool Inter- face [HSK-]	Lubrication	Max speed	Rated Power S1–100 %	Rated Torque S1-100 %	Rated speed	Rated Current	D1 [mm]	D2 [mm]	D3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Weight [kg]
F150S.30.11	E40	Grease	30,000 rpm	11 kW	13 Nm	8,000 rpm	20 A	150	190	150	571	170	90	92
F150S.18.29	A63	Grease	18,000 rpm	18 kW	35 Nm	8,000 rpm	76 A	150	150	126	695	70	115	65
F170S.18.41	A63	Grease	18,000 rpm	41 kW	56 Nm	7,000 rpm	91 A	170	170	150	787	122	111	100
F210S.18.28	A63	Grease	18,000 rpm	28 kW	63 Nm	4,200 rpm	77 A	210	210	152	748	152	211	125
F210S.20.28	A63	Oil-air	20,000 rpm	28 kW	63 Nm	4,200 rpm	77 A	210	210	152	748	152	211	125
F230S.18.35	A63	Grease	18,000 rpm	35 kW	75 Nm	4,500 rpm	83 A	230	230	152	768	152	211	150
F285S.10.78	A100	Grease	10,000 rpm	78 kW	250 Nm	3,000 rpm	162 A	285	285	208	965	200	229	310
F285S.14.78	A100	Oil-air	14,000 rpm	78 kW	250 Nm	3,000 rpm	162 A	285	285	208	965	200	229	310

A detailed data sheet for all spindle numbers can be downloaded from our homepage at: www.weissgmbh.de



INDIVIDUAL -DESIGNS

MILLING

INDIVIDUALITY and FLEXIBILITY

Its more than one thousand individual designs underscoring WEISS GmbH's to claim as the number one spot globally in the area of milling.

WEISS offers solutions for nearly all machines: from small milling machines to machining centres up to large portal milling machines. WEISS know-how is in constant demand when it comes to milling spindles, from manufacturer and users from around the world looking to keep their drive solutions on the cutting edge of technology and affordability.

Flexibility is the key word when it comes to the development of customer-tailored milling spindles. The developers and engineers at WEISS oriented themselves completely to the requirements of your machine concept. – Test the strength of WEISS by requesting your own personal spindle bid.

PREVIOUSLY REALISED PERFORMANCE PARAMETERS:

Output (S1–100%): up to 130 kW

Torque: up to 3,280 Nm

■ Max speed: up to **40,000 rpm (4 pole)**

up to 80,000 rpm (2 pole)

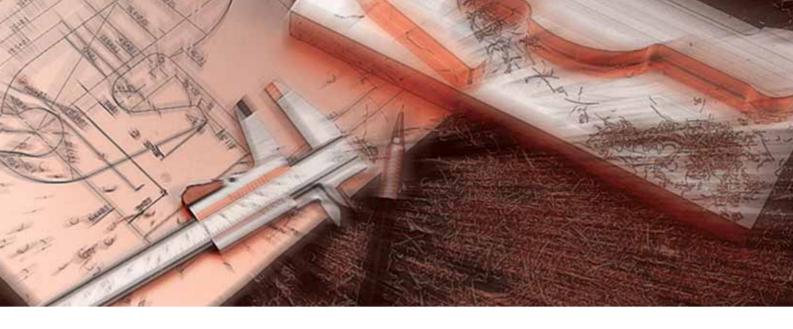
Spindle weight: between 10 kg

up to 1,500 kg

Run-out: from 1 μ m

PRODUCT LINE:

- Spindles with external drive (i.g. belts)
- Spindles with direct drive (motor spindles)
- synchronous motors
- asynchronous motors
- Spindles with **ball bearings** (chromium steel, hybride, ...)
- Grease for life lubrication
- Oil-air lubrication
- without integrated gearbox
- with integrated **gearbox** (up to 1:4)
- Tool interface HSK, ISO, and others

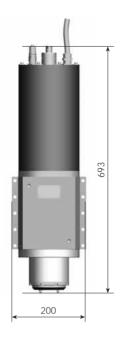


DESIGN EXAMPLES

- BEST SELECTION -

SPINDLE NUMBER	Interface	Max. speed	Special Features
175744	ISO-40	10,000 rpm	Glass/Rock cutting
175431B	ISO-40	15,000 rpm	Universal spindle
175857	ISO-50	10,000 rpm	Retrofit spindle for Aerospace application
175884	HSK-E25	60,000 rpm	High speed with automatic tool change
175979	HSK-A32	36,000 rpm	Mold & Die, high speed
175605	HSK-A40	30,000 rpm	Mold & Die with grease lubrication
175782	HSK-E40	40,000 rpm	Mold & Die with oil air lubrication
175676	HSK-E50	35,000 rpm	Plug and Play Spindle, automatic spindle change
175976	HSK-A63	10,000 rpm	Vibration pick-up and self-retaining clamping set
175553B	HSK-A63	15,000 rpm	Aluminium machining, minimal spindle, growth
175442B	HSK-A63	18,000 rpm	Body diameter 150 mm, Automotive application
175675	HSK-A63	24,000 rpm	Plug and Play Spindle, automatic spindle change
800022	HSK-A63	30,000 rpm	80 kW at S1-100%
800012A	HSK-A63	30,000 rpm	100 kW at S1-100%
800011	HSK-A100	6,000 rpm	Spindle with integrated gearbox (2,160 Nm)
175573	HSK-A100	10,000 rpm	Plug and Play Spindle, automatic spindle change
175460C	HSK-A100	15,000 rpm	High speed and high torque spindle
800029	HSK-A100	22,000 rpm	130 kW at \$1-100%

A detailed data sheet for all spindle numbers can be downloaded from our homepage at: www.weissgmbh.de







Category:

Tool interface: Max speed:

Rated speed:

Rated power (S1–100%): Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

175744

Milling I Individual

ISO 40 10,000 rpm

6,100 rpm 16 kW

25 Nm

25 IVIII

pneumatic

synchronous

0.021 kgm²

block

200 mm

693 mm

vertical / nose down

70 mm grease

Glass/ Rock cutting

175431B

Milling I Individual

ISO 40 15,000 rpm

3,000 rpm 26 kW

84 Nm

hydraulic

synchronous 0.024 kgm²

cylindrical 200 mm

807 mm

vertical / nose down

70 mm grease

Universal spindle

175857

Milling I Individual

ISO 50

10,000 rpm

5,300 rpm 75 kW

135 Nm

hydraulic

synchronous 0.09 kgm²

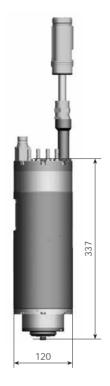
cylindrical

274.5 mm 850 mm

horizontal / vertical

110 mm grease

Retrofit spindle for Aerospace application







Category:

Tool interface:

Max speed:

Rated speed:

Rated power (S1–100%): Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

175884

Milling I Individual

HSK-E25 60,000 rpm

39,500 rpm

10 kW 2 Nm

hydraulic

,

asynchronous 0.00085 kgm²

cylindrical

120 mm

337 mm

vertical / nose down

30 mm Oil-air

High speed
with automatic
tool change

175979

Milling I Individual

HSK-A32 36,000 rpm

11,660 rpm

7 kW

6 Nm

pneumatic

asynchronous

0.003 kgm²

cylindrical

120 mm

469 mm swivelling

35 mm grease

Mold & Die, high speed

175605

Milling I Individual

HSK-A40

30,000 rpm

10,300 rpm

7 kW

6 Nm

pneumatic

synchronous

 0.003 kgm^2

cylindrical

120 mm

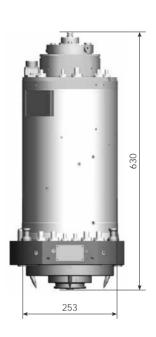
469 mm

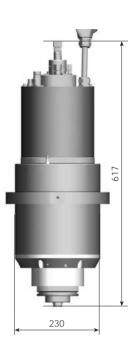
swivelling

45 mm grease

Mold & Die with grease lubrication







Category:

Tool interface: Max speed:

Rated speed:

Rated power (S1–100%): Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

175782

Milling I Individual

HSK-E40 40,000 rpm

20,700 rpm

13 kW 6 Nm

hydraulic

asynchronous 0.003 kgm²

cylindrical

120 mm 482.5 mm horizontal

45 mm Oil-air

Mold & Die with oil air lubrication

175676

Milling I Individual

HSK-E50 35,000 rpm

7,100 rpm 20 kW 28 Nm

hydraulic

synchronous 0.008 kgm²

cylindrical 253 mm 630 mm

swivelling

50 mm Oil-air

Plug and Play for automatic spindle changes

175976

Milling I Individual

HSK-A63 10,000 rpm

2,700 rpm 12 kW

12 KVV 42 Nm

hydraulic

synchronous 0.015 kgm²

cylindrical 230 mm 617 mm

horizontal / vertical

70 mm grease

With vibration pick-up







Category:

Tool interface: Max speed:

Rated speed:

Rated power (S1-100%):

Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

175553B

Milling I Individual

HSK-A63 15,000 rpm

1,130 rpm

19 kW

161 Nm

hydraulic

asynchronous 0.097 kgm²

cylindrical

240 mm

1030 mm

horizontal

70 mm grease

Aluminium machining, minimal spindle, growth

175442B

at

Milling I Individual

DISPLAYED

EMO

HSK-A63 18,000 rpm

8,000 rpm

29 kW 35 Nm

hydraulic

synchronous

0.011 kgm²

cylindrical

150 mm

725 mm horizontal

70 mm

grease

Body diameter 150 mm, Automotive application

175675

Milling I Individual

HSK-A63

24,000 rpm

5,000 rpm

50 kW

95 Nm

hydraulic

synchronous

0.041 kgm²

cylindrical

253 mm

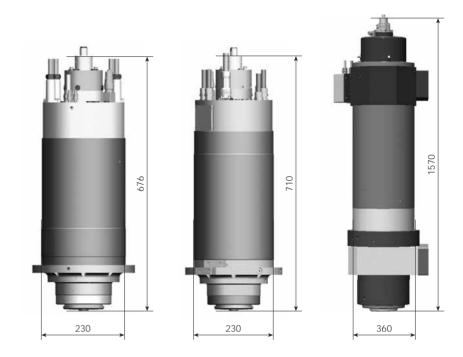
630 mm

swivelling

70 mm Oil-air

Plug and Play

Spindle, automatic spindle changes



Category:

Tool interface:

Max speed:

Rated speed:

Rated power (S1-100%):

Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

800022

Milling I Individual

HSK-A63

30,000 rpm

16,500 rpm 80 kW

26 Nm

hydraulic

asynchronous

0.028 kgm²

cylindrical

230 mm

676 mm horizontal

70 mm

Oil-air

800012A

Milling I Individual

HSK-A63

30,000 rpm

16,500 rpm 100 kW

58 Nm

hydraulic

synchronous

0.032 kgm²

cylindrical

230 mm

710 mm

swivelling

70 mm

Oil-air

100 kW at S1 - S100%

800011

Milling I Individual

HSK-A100

6,000 rpm

1.300 rpm

80 kW

2.160 Nm bei 1:4

hydraulic

synchronous

0,070 kgm²

cylindrical

420 mm

1,570 mm

vertical / nose down

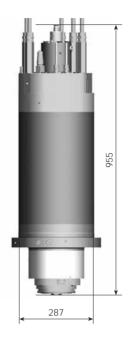
130 mm

grease

Plug and Play Spindle, automatic spindle changes

80 kW at S1 - S100%









Category:

Tool interface:

Max speed:

Rated speed:

Rated power (S1–100%): Nominal torque (S1–100%):

Unclamp unit:

Motor:

Moment of inertia (spindle):

Housing shape:

Block dimensions / diameter:

Overall length:

Operating position:

Bearing bore diameter: Bearing lubrication:

175573

Milling I Individual

HSK-A100 10,000 rpm

2,300 rpm

41 kW

200 Nm

hydraulic

synchronous

 0.09 kgm^2

cylindrical

253 mm

750 mm swivelling

110 mm

grease

Plug and Play
Spindle, automatic
spindle changes

175460C

Milling I Individual

HSK-A100 15,000 rpm

2,000 rpm

32 kW 300 Nm

hydraulic

asynchronous

0.26 kgm²

cylindrical 287 mm

955 mm

vertical / nose down

110 mm Oil-air

High speed and high torque spindle

800029

Milling I Individual

HSK-A100 22,000 rpm

17,000 rpm

130 kW 73 Nm

hydraulc

synchronous 0.05 kgm²

cylindrical 230 mm

748 mm swivelling

100 mm Oil-air

> 100 kW at S1 - S100%

YOUR CONTACT

Siemens and WEISS - everywhere near by!

The Siemens Automation & Drives division is present around the world through its branches – near you as well! Qualified and competent contact partners stand ready to work at your side, on site, and provide support.

WEISS Spindeltechnologie GmbH and its 6 current service centres in 4 continents serve as the centre of competence for Siemens in all questions related to spindle technology. Almost on 300 employees are currently employed for all spindle-related questions, from development to production to service.

We would gladly help you find answers to any questions you might have: whether you are interested in more brochures, have specific questions, or are ready to enquire about a detailed offer. **We'll help you to the next step**, **quickly and simply**.

If you already know your personal contact partner at Siemens or WEISS, you may contact them immediately regarding your enquiry.

We also recommend the following alternative options for initiating contact with us:



TELEFAX



+49 (0)9721/7701-133

Central fax number. Your enquiry will be automatically forwarded to your personal contact.

WEISS Spindeltechnologie GmbH A Siemens Company

ENQUIRY FORM	
Company	
Contact	
Address	
Country Telephone	
Fax	
E-Mail	
Please send me the following infomation:	
 WEISS - The Company WEISS - The Company (Brochure) - available June 2006 (Film) - available October 2005 	Language GERMAN Language ENGLISH
☐ GSS - Global Spindle Solutions (Overview - Product catalogue) ☐ SWSS - Siemens WEISS Spindle Services (Overview - Service catalogue)	
 □ Product catalogue TURNING □ Product catalogue MILLING □ Product catalogue GRINDING □ Product catalogue SPECIAL APPLICATIONS – available March 2006 □ Product catalogue HEAVY DUTY CUTTING – available March 2006 	
Please phone me back regarding	

All brochures and catalogues are also available on the internet for downloading: www.weissgmbh.de/downloads



Germany

Weiss Spindeltechnologie GmbH

Head Office/Sales

Rudolf-Diesel-Str. 35 97424 Schweinfurt

Phone: +49 (0) 9721 7701-0 Fax: +49 (0) 9721 7701-133

SWSS

Birkenfelder Weg 14 96126 Maroldsweisach

Phone: +49 (0) 9532 9229 347 Fax: +49 (0) 9532 9229 377 e-mail: info@weissgmbh.de www.weissgmbh.de

United Kingdom

Siemens Weiss Spindle Service Unit 3 A, Brooke Park, Handforth Dean, Cheshire, SK9 3PR, Manchester

Phone: +44 1625 548 840 Fax: +44 1625 543 488

e-mail:

spindle.service@siemens.com

USA

Weiss Spindle Technology, Inc 7255 Industrial Park Blvd. /Unit K Mentor, OH 44060

Phone: +1 440 946 4003 Fax: +1 440 942 9056

Brazil

Siemens Ltda. Rua Cel. Bento Bicudo, 111

05069-900 Lapa São Paulo

Phone: +55 11 3833 4435 Fax: +55 11 3833 4434

China

Siemens Factory Automation Engineering Ltd. Service Department No. 7 Jing Shun Road

Beijing

Postcode: 100028

Phone: +86 10 64719990 Fax: +86 10 64719991

